

**DESIGN OF FERROMAGNETIC SHAPE MEMORY
ALLOY COMPOSITES AND ACTUATORS
INCORPORATING SUCH MATERIALS**

Abstract of the Disclosure

5 The present invention employs an optimized cross-sectional shape for a ferromagnetic shape memory alloy (FSMA) composite that is used in a spring-type actuator, an improved hybrid magnetic trigger for use in FSMA based actuators, an a FSMA composite based spring type actuator, an a FSMA based spring type actuator including a stack of triggering units and FSMA springs, a FSMA composite based
10 torque actuator. The invention also includes a model that can be employed to evaluate different materials being considered as components a FSMA for a FSMA composite used in either a FSMA based torque actuator or a FSMA spring actuator.